8. The method of claim **1**, wherein recirculation is continued until, relative to the concentration in the sample, cells or particles are concentrated by a factor of at least 3.

9. The method of claim **1**, wherein recirculation is continued until, relative to the concentration in the sample, cells or particles are concentrated by a factor of at least 5.

10. The method of claim **1**, wherein recirculation is continued until, relative to the concentration in the sample, cells or particles are concentrated by a factor of at least 10.

11. The method of claim **1**, wherein recirculation together with microfluidic processing is the sole method used for concentrating cells or particles.

12. The method of claim **1**, wherein the sample comprises target cells or stem cells of a predetermined size and cells less than the predetermined size.

13. The method of claim **12**, wherein the target cells are leukocytes and cells less than the predetermined size are platelets or red blood cells.

14. The method of claim **12**, wherein the sample is blood or a composition that has been obtained by performing apheresis or leukapheresis on blood.

15. The method of claim **12**, wherein the leukocytes or stem cells being recirculated are bound to a carrier, antibody, or activator in a way that promotes or complements DLD separation.

16. The method of claim **13**, wherein the leukocytes are T cells.

17. The method of claim **16**, wherein said method is being used in a process for producing CAR-T cells.

18. The method of claim **17**, wherein said process does not include a centrifugation step.

19. The method of claim **17**, wherein said method is used to concentrate cells sufficiently to allow for their administration to a patient.

20. The method of claim **19**, wherein the sample is obtained from a patient and no more than four hours elapse from the time that the obtaining of the sample is complete until DLD is completed.

21. (canceled)

22. A method of making purified genetically engineered target cells, comprising:

a) obtaining a sample comprising target cells of a predetermined size and one or more contaminant cells or contaminant particles that are smaller than the predetermined size;

b) applying the sample to a microfluidic device at a first inlet and a wash fluid at a second inlet, wherein the microfluidic device comprises an array of obstacles positioned so as to differentially deflect a flow of target cells to a first outlet where they may be recovered as a target cell product, and to direct contaminant cells or contaminant particles that are smaller than the predetermined size to a second outlet;

c) flowing the sample and wash fluid through the device, wherein the concentration of target cells at the first outlet is determined and at least a portion of the target cells are recirculated from the outlet so as to replace, all, or at least a portion, of the wash fluid being applied to an inlet of the device, said recirculation being continued or repeated until a desired product cell concentration, PC, is reached;

d) once PC is reached, directing the flow of target cells from the first outlet to a site where the target cells are transformed or transfected to form genetically engineered target cells;

e) flowing the genetically engineered target cells to a device where they are separated from reagents, virus or other materials used in transforming or transfecting the target cells to form purified genetically engineered target cells;

f) either collecting the purified genetically engineered target cells or flowing the purified genetically engineered target cells to another site where they are further processed before collection.

23-44. (canceled)

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